5440 and 5460 Self-Propelled Harvesters

JOHN DEERE

TECHNICAL MANUAL

5440 and 5460 Self-Propelled Harvesters

TM1177 (01APR77) English

TM1177 (01APR77)

LITHO IN U.S.A.
ENGLISH

5440 AND 5460 SELF-PROPELLED HARVESTERS

Technical Manual TM-1177 (Apr-77)

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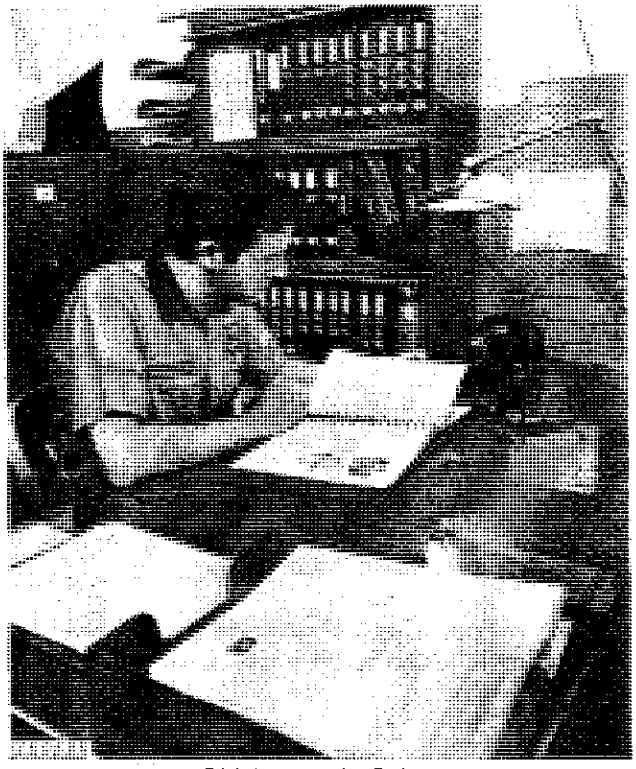
All information, illustrations and specifications contained in this technical manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

INTRODUCTION



Use FOS Manuals for Reference

Use Technical Manuals for Actual Service

This technical manual is part of a twin concept of service:

- **FOS Manuals—for reference**
- **Technical Manuals—for actual service**

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

Fundamentals of Service (FOS) Manuals cover basic theory of operation, *fundamentals* of trouble shooting, *general* maintenance, and *basic* types of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced technicians.

Technical Manuals are concise on-the-job service guides containing only the vital information needed for a specific machine.

When a technician should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the TM to identify the reference.

Some features of this technical manual:

- *Table of contents at front of manual*
- *Exploded views showing parts relationship*
- *Photos showing service techniques*
- *Specifications grouped for easy reference*

This technical manual was planned and written for you—an experienced mechanic. Keep it in a permanent binder in the shop where it is handy. Refer to it whenever in doubt about correct service procedures or specifications.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.

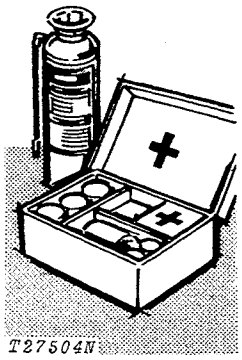
Because John Deere sells its products world-wide, U.S. units of measure are shown with their respective Metric equivalents throughout this operator's manual. These equivalents are the SI (International System) Units of Measure.

SAFETY AND YOU

T27999N

INTRODUCTION

⚠ This safety alert symbol identifies important safety messages in this manual and on the harvester. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.



T27504N

Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located—know how to use them.

SERVICE AREA

Keep the service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment.

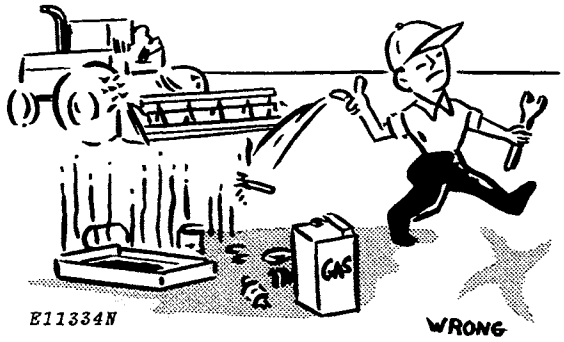
Make sure the service area is adequately vented.

Periodically check the shop exhaust system for leakage. Engine exhaust gas is dangerous.

Be sure all electrical outlets and tools are properly grounded.

Use adequate light for the job at hand.

AVOID FIRE HAZARDS



E11334N

Don't smoke while refueling or handling highly flammable material.

Engine should be shut off when refueling.

Use care in refueling if the engine is hot.

Don't use open pans of gasoline or diesel fuel for cleaning parts. Good commercial, nonflammable solvents are preferred.

Provide adequate ventilation when charging batteries.

Don't check battery charge by placing metal objects across the posts.

Don't allow sparks or open flame near batteries.

Don't smoke near battery.

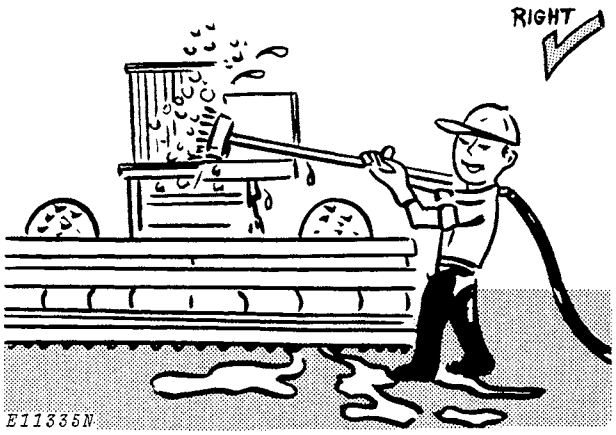
Never check fuel, battery electrolyte or coolant levels with an open flame.

Never use an open flame to look for leaks anywhere on the equipment.

Never use a open flame as a light anywhere on or around the equipment.

When preparing engine for storage, remember that inhibitor is volatile and therefore dangerous. Seal and tape openings after adding the inhibitor. Keep container tightly closed when not in use.

CLEANING THE HARVESTER



Always stop the engine before cleaning the harvester.

Keep the operator's platform clean. Do not use it as a storage area.

Keep the radiator screen free of foreign matter. Avoid a possible fire hazard.

Keep all equipment free of dirt and oil. In freezing weather, beware of snow and ice on ladder steps and operator's platform.

FLUIDS UNDER PRESSURE

Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

Don't forget the hydraulic system or diesel fuel injection system may be pressurized! To relieve pressure, follow the instructions in this technical manual.

When checking hydraulic pressure, be sure to use the correct test gauge for the pressure in the particular system.

PERSONAL SAFETY

Always avoid loose clothing or any accessory—flopping cuffs, dangling neckties and scarves—that can catch in moving parts and put you out of work. Always wear your safety glasses while on the job.

Keep transmission and brake control units properly adjusted at all times. Before making adjustments, stop engine.

Before removing any housing covers, stop engine. Take all objects from your pockets which could fall into the opened housings. Don't let adjusting wrenches fall into opened housings.

Don't attempt to check belt tension while the engine is running.

Don't adjust the fuel system while the machine is in motion.

Before repairing the electrical system, or performing a major overhaul, make sure the batteries are disconnected.

Avoid working on equipment with the engine running. If it is necessary to make checks with the engine running, ALWAYS USE TWO PEOPLE—one, the operator, at the controls, the other checking where the operator can see the person. Also, put the transmission in neutral, set the brake, and apply any safety locks provided. KEEP HANDS AWAY FROM MOVING PARTS.

Use extreme caution in removing radiator caps, drain plugs, grease fittings, or hydraulic pressure caps.

Section 10
GENERAL

CONTENTS OF THIS SECTION

Group 5
SPECIFICATIONS

ENGINE

Horsepower:
- 5440 ..... 178 (133 kW)*
  150 (112 kW)**
- 5460 ..... 255 (190 kW)*
  225 (168 kW)**

Type ..... 6-cylinder, in-line valve-in-head, diesel, turbo-charged and inter-cooled

Bore and stroke
- 5440 ..... 4.25 in. x 4.75 in.
  108 mm x 121 mm
- 5460 ..... 5.12 in. x 5 in.
  130 mm x 127 mm

Displacement
- 5440 ..... 404 cu. in. (6620 cm^3)
- 5460 ..... 619 cu. in. 10143 cm^3)

Compression ratio
- 5440 ..... 15.5 to 1
- 5460 ..... 15.4 to 1

Firing order 1-5-3-6-2-4

Valve clearance ..... Intake-0.018 in. (0.46 mm)
Exhaust-0.028 in. (0.71 mm)

Injection pump timing ..... TDC

Engine Speeds
- Working speed ..... 2100 rpm
- Slow idle ..... 800 rpm
- Fast idle (Full load) ..... 2100 rpm
- (No load) ..... 2300 rpm

LUBRICATION SYSTEM ..... Full pressurized with full-flow micronic oil filter, water-cooled oil cooler, and bypass valves for filter and cooler.

**Factory observed net horsepower at flywheel less fan measured at 85°F (30°C), 29.3 in. Hg. operating at 2100 rpm.*

***Factory observed net horsepower at cutterhead drive sheave operating at 2100 rpm.*

FUEL SYSTEM:

Type ..... Direct injection

Filter ..... Two-stage with replaceable impregnated paper element.

Injection pump type ..... Multiple plunger, in line

Air cleaner ..... Dry element with self-cleaning precleaner and safety element

COOLING SYSTEM:

Type ..... Pressurized with centrifugal pump

Temperature control ..... Heavy-duty thermostats

ELECTRICAL SYSTEM:

Type ..... 12-volt, negative grounded

Batteries ..... Two, 6-volt 87-plate 204-ampere-hour, 7D type, connected in series

Alternator:
- 5440 ..... 12-volt, 72-amp capacity
- 5460 ..... 12-volt, 72-amp capacity

MAIN CLUTCH (Blower Fan and Cutterhead Drive):

Type ..... Over-center, dry, metallic button, adjustable

Number of disks 2

Diameter ..... 12 in. (305 mm)

Actuated ..... Hand lever

TRANSMISSION:

Type ..... Automotive spur gear with four speeds. Transmission is equipped with neutral start switch.

FINAL DRIVE:

Type ..... Pinion and ring gear

Ground Speeds In mph (kmh)*
(2100 engine rpm)

Gear	2 Wheel Drive With 18.4-26 Tires
1st	0-1.64 (2.6)
2nd	0-3.77 (6.1)
3rd	0-6.86 (11.0)
4th	0-16.80 (27.0)
Gear	**Power Rear Wheel Drive With 18.4-26 Tires**
1st	0-1.40 (2.3)
2nd	0-2.80 (4.5)
3rd	0-4.35 (7.0)
4th	0-6.95 (11.2)

**Reverse Ranges: (Ground travel speeds are approximately one-half the forward range.)*

Hydrostatic System (Ground Drive):
Pump:
- Type ..... Variable displacement Sunstrand 23 Series
- Speed ..... 2100 rpm
- Displacement ..... 0-5.43 cu. in. (89 cm^3) per revolution

Charge Pump:
- Type ..... Gear
- Speed ..... 2100 rpm
- Displacement ..... 1.1 cu. in. (18.0 cm^3) per revolution
- Flow rate ..... 10 gpm (37.9 lpm) at 2100 rpm

Motor:
- Type ..... Fixed displacement Sunstrand 23 Series
- Speed ..... 0-2100 rpm
- Displacement ..... 5.43 cu. in. (88.98 cm^3) per revolution
- Relief pressure ..... 5000 psi (345 bar) (350 kg/cm^2)
- Flow rate ..... 49 gpm (185 lpm) at 2100 rpm

Hydraulic System (Machine Functions):
Type: Open-center, constant-flow system. Includes power steering, header lift, spout rotation, cutterhead reverse grinder drive, and breakaway coupler (Optional)
- Pump ..... Gear-type
- Relief pressure ..... 2250 psi (155-bar) (158 kg/cm^2)
- Flow rate: Steering (Priority) ..... 2.75 gpm (10.4 lpm)
- Total ..... 11.25 gpm (42.6 lpm)
- Speed ..... 2100 rpm

Steering:
Type ..... Full power hydraulic

Tire Options:
- Front Wheels: (10-ply rated) ..... 18.4-26; 10 PR
- Rear Wheels: (6-ply rated, 3-rib implement) ..... 11.00-16; 6 PR
- Power rear wheel drive ..... 11.2-24 (4-PR, cleat type)

Brakes:
Type: 12-inch (304.8 mm) hydraulically actuated shoe-type. Individual brakes controlled by separate pedals.

Cutterhead:
- Type ..... Helical
- Diameter ..... 24 in. (609.6 mm)
- Width ..... 22 in. (558.8 mm)
- Knives ..... Nine, J-style, tungsten carbide edge
- Speed ..... 850 rpm
- Drive ..... Three matched C-section belts

Cutterhead Reverse Grinder:
- Drive ..... Hydraulic motor
- Speed ..... 425 rpm

Blower:
- Type ..... Lagged Radial Paddle
- Diameter ..... 32 in. (813 mm)
- Number of paddles 4
- Speed ..... 1020 rpm

Augers:
- Number 2
- Drive ..... Chain from cutterhead
- Diameter ..... 10 in. (254 mm)
- Speed ..... 558 rpm
- Discharge ..... Side flow to blower fan

Power Rear Wheel Drive (Optional):
- Type ..... Hydrostatic motor driven with planetary gear reduction in wheel hub, uses pressure oil from hydrostatic system
- Controls ..... Solenoid operated control valves, by electric switch on console
- Planetary disconnect ..... Hydraulic wet brake on ring gear releases when drive is disengaged

CAPACITIES:

Fuel tank ..... 72 U.S. gals. (272.5 l)
Cooling system:
5440 ..... 11 U.S. gals. (41.6 l)
5460 ..... 15 U.S. gals. (56.8 l)
Engine crankcase (including oil filter)
5440 ..... 17 U.S. qts. (16.1 l)
5460 ..... 24 U.S. qts. (22.7 l)
Transmission ..... 11 U.S. qts. (10.4 l)
Feed roll drive case ..... 3 U.S. qts. (2.8 l)
Final drives (two) ..... 8 U.S. qts. ea. (7.6 l)
Main gear case ..... 10 U.S. qts. (9.5 l)
Hydraulic system (including oil lines and cylinders) ..... 3 U.S. gals. (11.3 l)
with hydraulic outlet ..... 5 U.S. gals. (19 l)
Hydraulic brake master cylinder ..... 1 U.S. Pt. (0.5 l) (approx.)
Hydrostatic drive system (including lines and components) (add 4 gals. [15.1 l] to capacity if equipped with Power Rear Wheel Drive) ..... 7 U.S. gals. (26.5 l)

OPERATOR'S CAB

Cab Glass ..... 49 square feet (4.55 m²)
Pressure Fans (Blower)
Capacity .435 cubic feet (10.42 m²) per minute
Filter ..... Removable, reuseable, dry-type, paper element; 37 x 6-1/8 x 2-3/16 in. (940 x 156 x 56 mm)
Heater
Capacity ..... 18,000 BTU 3000 cubic feet (8.50 m³) per minute
Air conditioner
Capacity ..... 20,000 BTU 300 cubic feet (8.50 m³) per minute
Refrigerant ..... Refrigerant 12
Filters ..... Removable, reuseable, urethane foam; one each in normal and maximum air recirculators.
Fuses:
Electric Clutch ..... 7.5 Amp.
Dome Light ..... 7.5 Amp.
Windshield Wiper ..... 7.5 Amp.
Pressurizer Fans (Blower) ..... 30 Amp.

Lamps:
Head ..... 15 Amp.
Tail ..... 15 Amp.
Warning ..... 15 Amp.
Spout ..... 15 Amp.

TIRE INFLATION PRESSURES:

Front Wheels .....26 psi (1.8 bar) (1.8 kg/cm²)
Torque to 300 ft-lbs (407 Nm)

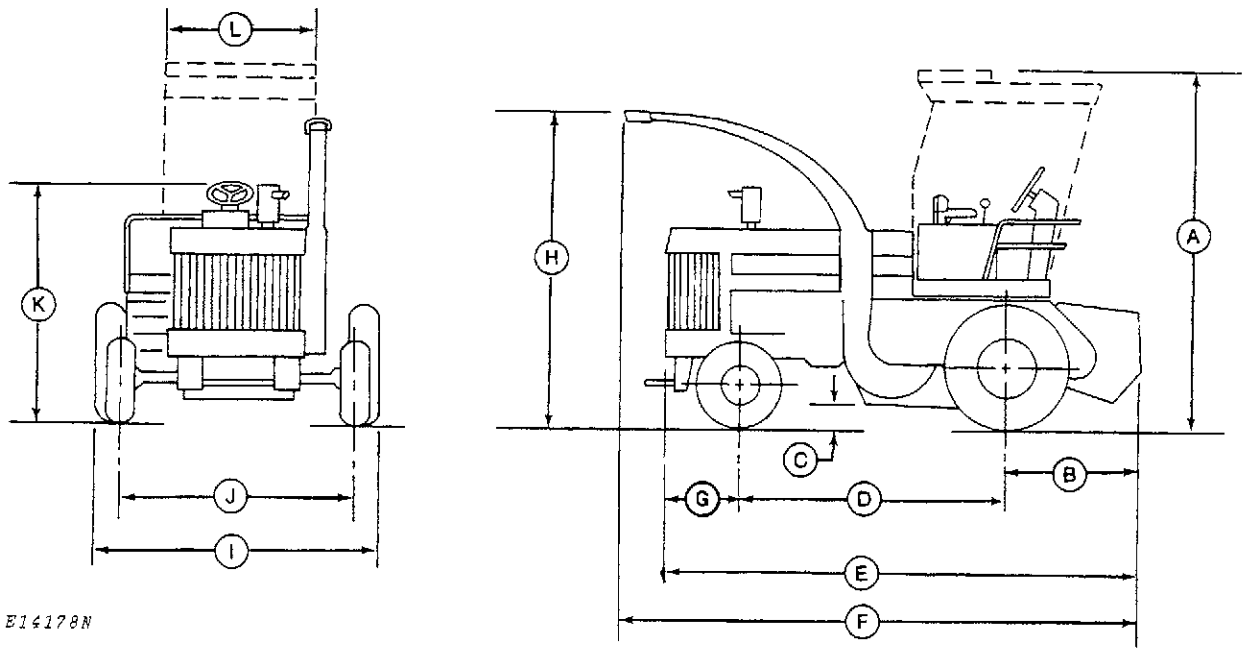
Rear Wheels.....20 psi (1.4 bar) (1.4 kg/cm²)
Torque to 120 ft-lbs (163 Nm)

Pickup Gauge Wheels ..... 30 psi (2.1 bar) (2.1 kg/cm²)

WEIGHT:

5440 with cab and standard axle .....11900 lbs (5398 kg)

5460 with cab and standard axle .....12400 lbs (5625 kg)



A—132.50 in. (3 366 mm)
B—55.70 in. (1 415 mm)
C—17.50 in. (445 mm)
D—103.50 in. (2 629 mm) 5460
90.50 in. (2 200 mm) 5440

E—187.30 in. (4 757 mm) 5460
177.40 in. (4 674 mm) 5440
F—224.75 in. (5 709 mm)
G—28.10 in. (714 mm) 5460
30.90 in. (763 mm) 5440
H—127.00 in. (3 226 mm)

I —103.54 in. (2 630 mm)
105.34 in. (2 676 mm) with Bulge
J—110.00 in. (2 794 mm) MAX
82.00 in. (2 083 mm) MIN
K—106.20 in. (2 697 mm)
L—48.50 in. (1 232 mm)

Fig. 1-Dimensions of 5440 and 5460 Self-Propelled Harvesters

Group 10
PREDELIVERY, DELIVERY AND AFTER-SALE SERVICES

TEMPORARY UNIT STORAGE

After receiving your unit from the factory and before putting the machine into temporary storage, perform the following checks.

For long term storage (over 30 days) information, consult your operator's manual.

1. Check battery electrolyte level and charge the battery, if necessary.

2. Check the level of coolant in the radiator. The coolant should be maintained at a level 2 inches (51 mm) above the baffle.

3. Fill the fuel tank.

4. Check crankcase oil level. Oil should be above bottom mark of dipstick after machine has been shut down for 10 minutes.

5. Relieve hydraulic pressure by stopping engine and operating control levers until system fails to respond.

6. Reduce shipping pressure of front tires to 26 psi (1.8 bar) (1.8 kg/cm²) and rear tires to 20 psi (1.4 bar) (1.4 kg/cm²).

7. Cover unit for protection and cleanliness.

PREDELIVERY SERVICE

Because of the shipping factors involved, plus extra finishing touches that are necessary to promote customer satisfaction, proper predelivery service is of prime importance to the dealer and the customer.

NOTE: A protective cover is placed over the muffler outlet to prevent turbocharger rotation during transit. Remove protective cover before unloading harvester. Reinstall protective cover before transporting the harvester to the customer if machine is to be moved at highway speeds.

After completing the factory-recommended dealer checks and services listed on the predelivery tag, remove the tag from the harvester and file it with the shop order for the job. The tag will certify that the harvester has received the proper predelivery service when that portion of the customer's John Deere Delivery Receipt is completed.

Use the following list when preparing a unit for delivery to the customer.

1. Pre-Cleaner

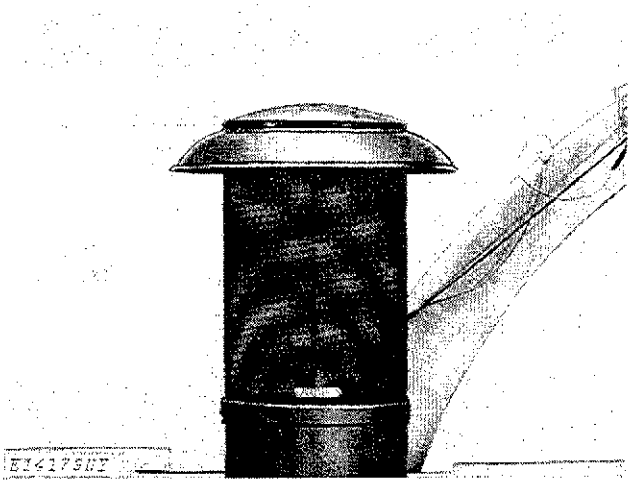


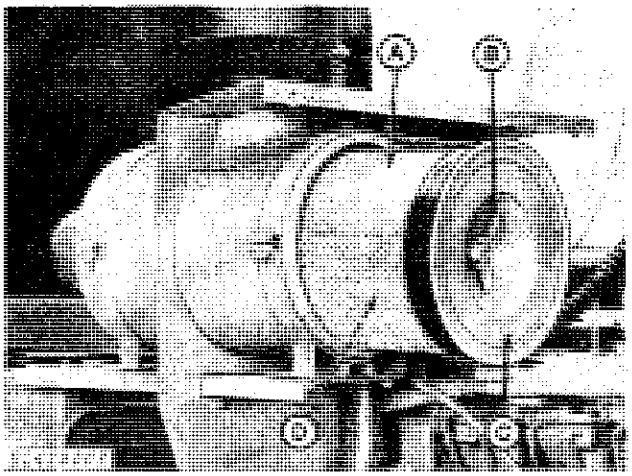
Fig. 1-Pre-cleaner

Check and clean pre-cleaner bowl.

Pre-cleaner checked and cleaned. *Yes*_____

2. Air Cleaner

Check air cleaner restriction indicator lamp on instrument panel. If indicator shows red, check and clean both primary and safety filter elements. Replace elements, if necessary.

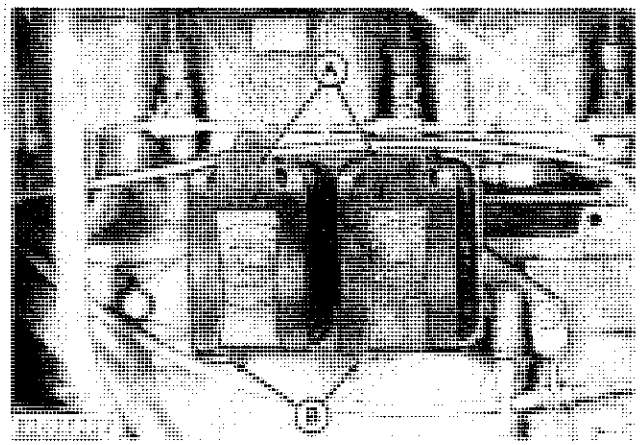


A—Outer Element
B—Wing Nut
C—Outer Element Cover
D—Inner Element

Fig. 2-Air Cleaner

Air Cleaner checked *Yes*_____
Filters Replaced *Yes*_____

3. Fuel Filters



A—Fuel Filters
B—Drain Plugs

Fig. 3-Fuel Filters

Check fuel filters and drain any sediment that is present. (See Section 30)

Filters checked *Yes*_____
Sediment present in filters *Yes*_____

4. Batteries

Check battery electrolyte level. If distilled water is not available, use clean soft water. Avoid use of hard water. Remove foreign material from top of battery and coat terminals with petroleum jelly. Clean vent holes in battery caps.

IMPORTANT: Never add water to battery in freezing weather unless engine is to be run long enough (2 or 3 hours) to assure mixing of water and electrolyte.

Check battery connection.
Punch date code on battery.

Battery Connections checked *Yes*_____
Water added *Yes*_____

5. Fuel Tank

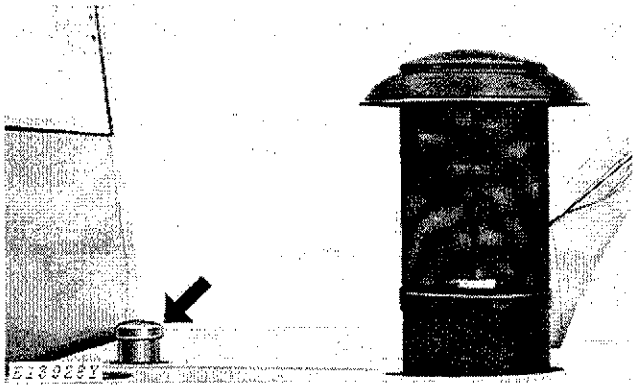
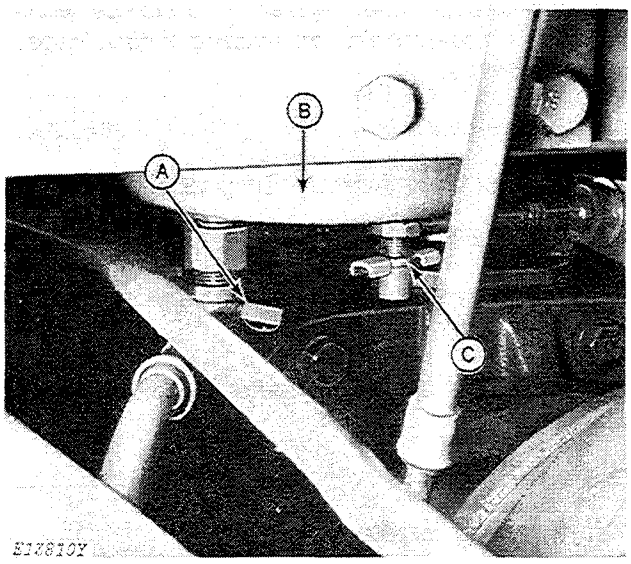


Fig. 4-Fuel Tank Filler Cap

Check the fuel gauge. If fuel gauge indicates a low supply of fuel, fill the tank (arrowed). Fuel tank capacity is 72 U.S. gals (273 l).

Fuel tank level *Full 1/2 Full Empty*

6. Fuel Tank Sump



A—Fuel Shut Off Valve
B—Fuel Tank
C—Sump Drain Cock

Fig. 5-Fuel Tank Sump

IMPORTANT: Sediment will settle over extended periods of transport or storage.

Open the sump drain cock. Allow fuel to drain out for approximately three seconds to allow moisture and sediment to drain out.

NOTE: Fuel tank sump drain is located on the bottom of the fuel tank.

Fuel sump drained *Yes*_____

7. Radiator

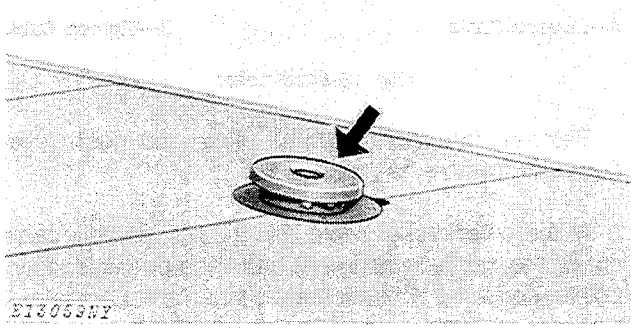


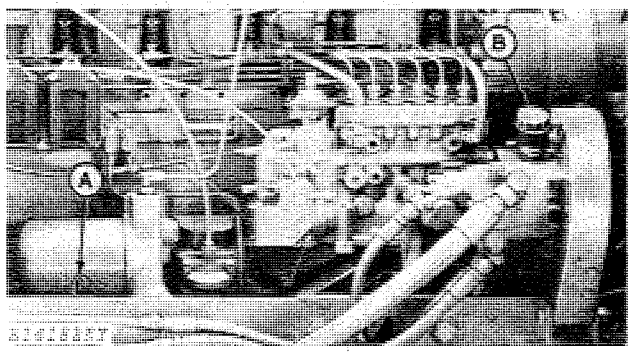
Fig. 6-Radiator Filler Cap

CAUTION: Remove the radiator filler cap only when the coolant temperature is below the boiling point. Then loosen the cap slightly to the stop to relieve pressure before removing the cap sompletely.

Check the level of coolant in the radiator. Coolant should be maintained at a level 2 inches (51 mm) above the baffle. Add permanent type antifreeze if cold weather is anticipated.

Radiator coolant level checked *Yes*_____
Coolant or antifreeze added *Yes*_____

8. Crankcase Oil Level



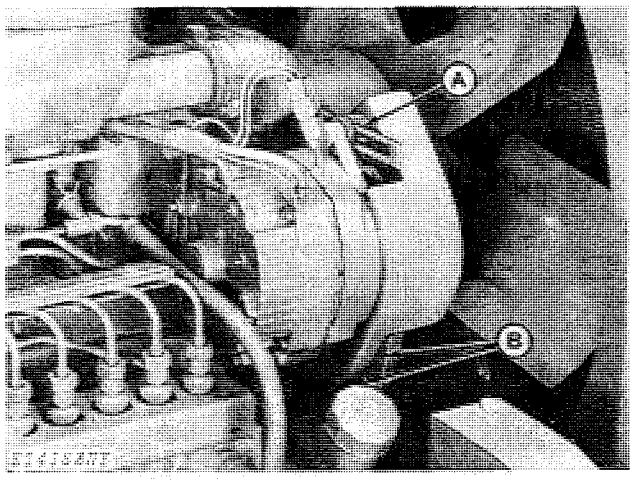
A—Dipstick
B—Oil Filler Cap

Fig. 7-Crankcase Oil Level

Check crankcase oil level with machine on level ground and engine off. If oil level is at or below bottom mark on dipstick, add sufficient oil of the proper viscosity and type specified on page 10-20-2 to bring oil level to between marks on dipstick. Do not operate engine with oil level below the bottom mark.

Crankcase oil level checked *Yes*_____
Oil added, if any *qts (l)*

9. Alternator-Fan Belt Tension



A—Cap Screw **B—Belts**

Fig. 8-Alternator-Fan Belt Tension

Check the tension on the alternator and fan belts.

The belts should have 1-inch (25 mm) flex when 25 pounds (111 N) of force is applied to the belt midway between the two pulleys.

IMPORTANT: Do not pry on rear alternator housing as this may damage the alternator.

Alternator belt tension checked *Yes*_____
Fan belt tension checked *Yes*_____

10. Check Air Intake Hoses

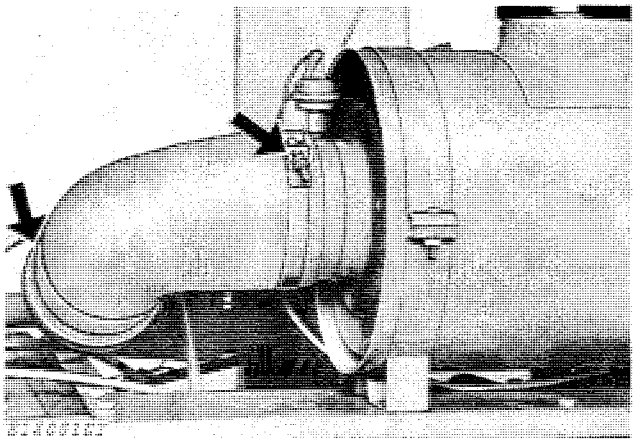


Fig. 9-Air Intake Hose

Check clamps on hose which connect air cleaner and turbocharger tube. Tighten hose clamps where necessary to prevent dirt from entering engine. Inspect hose for cracks.

Connections checked *Yes*_____

11. Check and Adjust Engine Speeds

Check engine speeds and adjust if necessary.

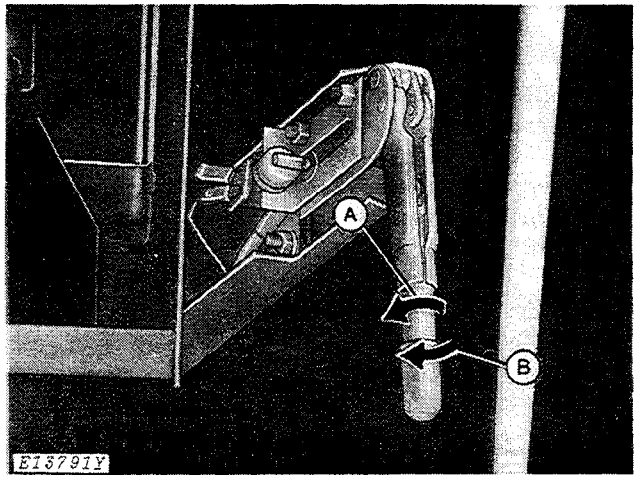
NOTE: Engine should be at operating temperature for the following adjustments.

See Section 30 for complete speed adjustment coverage.

Engine speeds checked *Yes*_____

12. Parking Brake

Adjusting Parking Brake



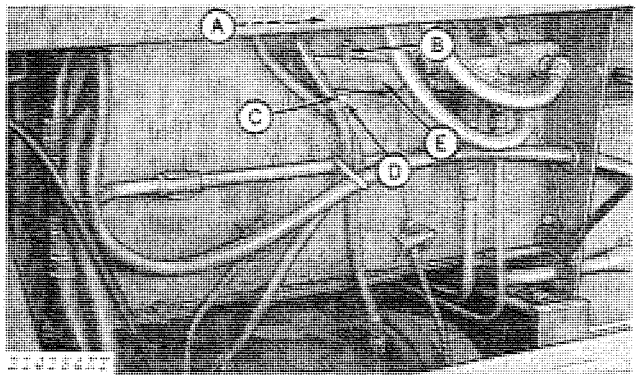
A—Loosen Cable **B—Tighten Cable**

Fig. 10-Brake Lever

Release the parking brake lever and push lever downward as far as possible.

At the lower end of cable (B, Fig. 11.), pull the cable out of the cable housing (A) as far as possible; then, pull on equalizer (E) until brakes just start to actuate. A 1/8-inch (3 mm) space (C) should exist between the cable nut (D) and the equalizer (E).

If correct space does not exist, thread cable nut (D) on or off cable (B) until the space is correct.



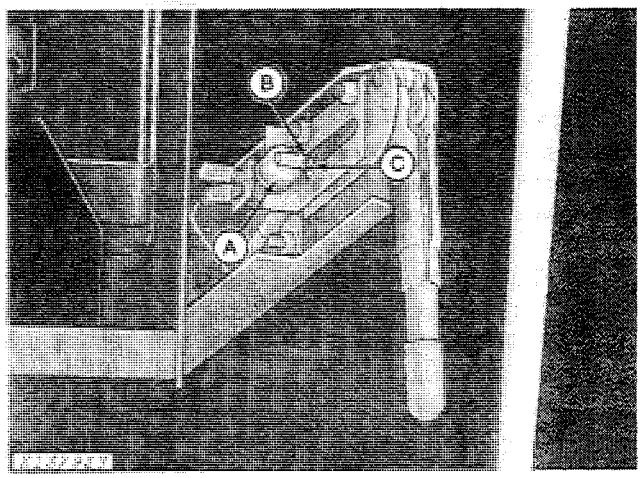
A—Cable Housing
B—Cable
C—1/8-In. (3 mm)
D—Cable Nut
E—Equalizer

Fig. 11-Parking Brake Adjustment

Tighten or loosen cable by twisting lever handle in the proper direction (as shown, in Fig. 10) until lever actuation will cause sufficient braking for parking. At the proper adjustment, approximately 30 pounds (133 N) pull will be required to lock the brakes.

IMPORTANT: Damage to the brake linkage will result if the lever handle is tightened to the extent that excessive pull is required to lock the brakes.

Adjusting the Parking Brake Horn Switch



A—Nuts
B—Switch Button
C—Pin

Fig. 12-Adjusting Parking Brake Horn Switch

Whenever the parking brake is disengaged, make certain the warning horn is off. If horn is not off, adjust the following:

Adjust nuts (A) until the switch button (B) contacts the parking brake lever pin (C) when the lever is disengaged.

Parking brake checked *Yes*_____
Horn switch checked *Yes*_____

13. Check Light Operation

Check operation of the following lights.

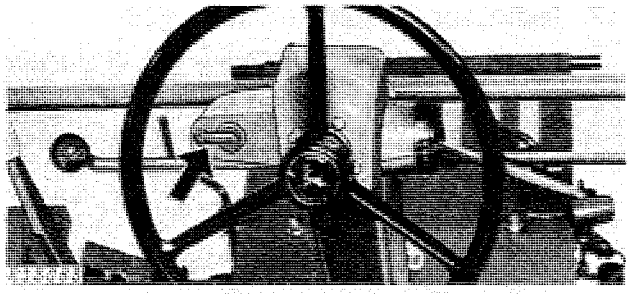
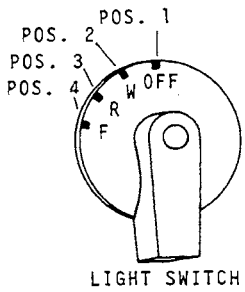


Fig. 13-Turn Signal Switch



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POSITION	WARNING LAMPS	SPOUT LAMP	HEAD LAMPS	TAIL LAMPS	TURN SIGNAL
1	OFF	OFF	OFF	OFF	OFF
2	ON	OFF	OFF	OFF	ON
3	ON	OFF	ON	ON	ON
4	OFF	ON	ON	OFF	OFF

Fig. 14-Light Switch

All Lights checked *Yes*_____

14. Check Transmission Shifting

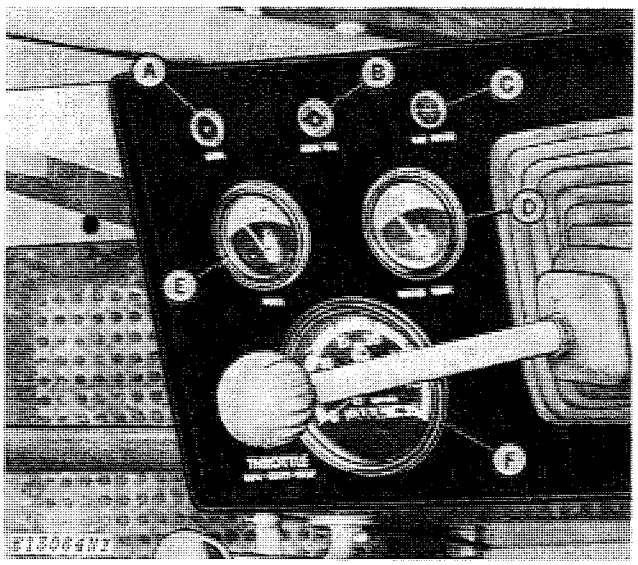
The harvester has four speed ranges. The gearshift lever is used to shift transmission into desired range.

CAUTION: Make certain the gearshift lever and speed range control lever are in neutral position before starting engine.

IMPORTANT: Move the speed range control lever to neutral before attempting to shift gears. Do not attempt to shift gears "on-the-go."

Transmission operational *Yes*_____

15. Indicator Lamps and Gauges



A—Alternator Lamp
B—Oil Indicator Lamp
C—Air Restriction Lamp
D—Water Temperature Gauge
E—Fuel Gauge
F—Tachometer

Fig. 15-Indicator Lamps and Gauges

Air Restriction Indicator

The red lamp in the restriction indicator will glow whenever the air cleaner element is dirty and needs servicing.

Alternator Indicator

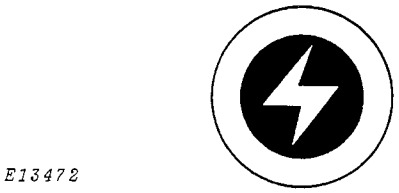


Fig. 16-Alternator Indicator Lamp

This alternator lamp glows when the alternator is not charging. If the lamp goes on while the engine is running, stop engine and determine cause. Operation of this light is checked by turning the key to the "IGNITION" position with the engine stopped.

IMPORTANT: If indicator lamp glows when both switch and engine are "OFF", disconnect battery cables (negative cable first) then see section 40.

Oil Indicator

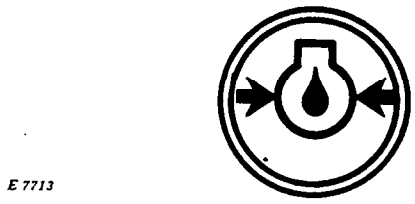


Fig. 17-Oil Indicator Lamp

If the oil indicator lamp glows when engine is running, stop engine immediately and determine cause. The lamp will glow even though engine isn't running if the switch is turned to "IGNITION."

IMPORTANT: If indicator lamp glows when both switch and engine are "OFF", disconnect battery cables (negative cable first) then see section 40.

Water Temperature Gauge

This gauge indicates coolant temperature. Normal operating temperature is 180°F (82°C) to 200°F (93°C) (indicated by white band on dial). If temperature is 220°F (104°C) or above (indicated by red band on dial), stop engine and determine cause. At approximately 225°F (107°C) the automatic high-temperature warning device will activate the horn. Stop operation at once and determine cause of overheating.

IMPORTANT: If horn activates while harvester is operating and temperature gauge needle is in red band on dial, stop harvester and let engine run at idle speed. Check for cause of overheating. Failure to do so will result in serious engine damage.

Fuel Gauge

The fuel gauge indicates the quantity of fuel in the fuel tank. Fuel tank capacity is 72 gallons (273 l).

Gauges and Indicators Operational *Yes*_____

16. Checking Tire Pressure and Wheel Torques

Check the air pressure in all the tires with an accurate gauge having 1-pound (0.45 kg) graduations.

IMPORTANT: All tires must be inflated to the same pressure.

Adjust pressure in tires to the following specifications:

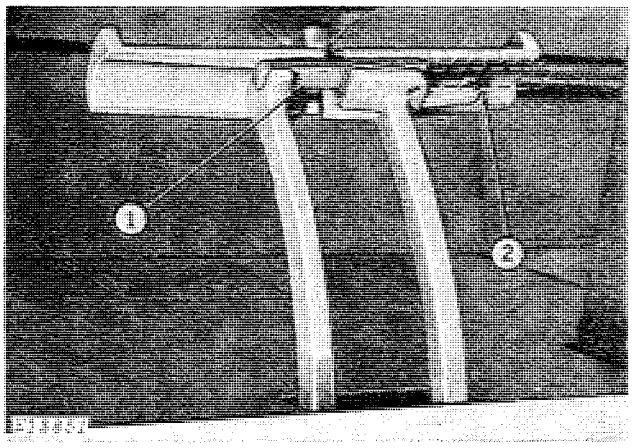
Front Wheels ..... 26 psi
(1.8 bar) (1.8 kg/cm²)
Torque to 300 ft-lbs (407 Nm) (41 kgm)

Rear Wheels..... 20 psi
(1.4 bar) (1.4 kg/cm²)
Torque to 90 ft-lbs (122 Nm) (12 kgm)

Pickup Gauge Wheels ..... 30 psi
(2.1 bar) (2.1 kg/cm²)

17. Hydraulic Brakes

Check brake operation.



1—Brake Lock Position for Both Brakes
2—Brake Lock Position for Single Brake

Fig. 18-Brake Pedals

Brakes operational *Yes*_____

CHECK ALL GREASE FITTINGS AND FLUID LEVELS

Check all grease fittings for proper lubrication. Grease if necessary. See the operators manual.

CAUTION: To avoid possible injury, and to insure best results, always stop engine operation and lower all units to the ground before lubricating.

Grease fittings lubricated and fluids checked *Yes*_____

18. Steering

Start the engine and operate the steering wheel. Steering should be free and easy with engine running.

Steering operational *Yes*_____

19. Accessible Hardware Torque Values

Check all accessible bolts and nuts for proper tightness. If hardware seems loose, tighten it to the proper torque. The table below gives correct torque values for various bolts and cap screws. Most hardware used is high-strength (note dashes on hex. heads).

RECOMMENDED TORQUE IN FT-LBS (Nm)
COARSE AND FINE THREADS

2 (B) 5 (D) 8 (F)

Bolt Diameter	Plain Head	Three Dashes	Six Dashes
1/4	Not used	10 (14)	14 (19)
5/16	Not used	20 (27)	30 (41)
3/8	Not used	35 (47)	50 (68)
7/16	35 (47)	55 (75)	80 (108)
1/2	55 (75)	85 (115)	120 (163)
9/16	75 (102)	130 (176)	175 (237)
5/8	105 (142)	170 (230)	240 (325)
3/4	185 (251)	300 (407)	425 (576)
7/8	160 (217)	445 (603)	685 (929)
1	250 (339)	670 (908)	1030 (1396)
1-1/8	330 (447)	910 (1234)	1460 (1979)
1-1/4	480 (651)	1250 (1695)	2060 (2793)

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Fig. 19-Torque Chart

The types of bolts and cap screws are identified by head markings as follows:

Plain Head: regular machine bolts and cap screws.

3-Dash Head: tempered steel high-strength bolts and cap screws.

6-Dash Head: tempered steel extra high-strength bolts and cap screws.

Machine bolts and cap screws 7/8-inch and larger are sometimes formed hot rather than cold, which accounts for the lower torque.

All accessible hardware torqued *Yes*_____

20. Check Main Clutch Operation

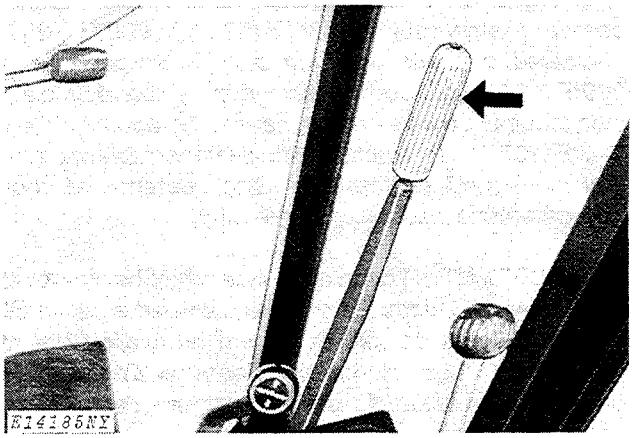


Fig. 20-Main Drive Clutch Lever

Place gearshift lever in desired gear range. Engage feedroll drive lever before engaging main drive clutch.

In normal operation the main clutch should be used to start and stop the harvesting unit and feedrolls. The machine should then be permitted to clean out prior to disengaging main clutch.

The feedroll drive clutch should be disengaged only if plugging or an emergency situation occurs. Disengage main drive clutch before re-engaging feedroll drive clutch. This prevents damage to the feedroll drive clutch components.

IMPORTANT: Do not use the feedroll drive clutch for convenience. For example, traveling across windrows with cutterhead still running but harvesting unit not. Either disengage main clutch or leave harvester operating.

IMPORTANT: The main clutch should normally be engaged when the engine is running below half speed. However, when material is in the machine, it is necessary to engage the clutch at full engine speed to prevent plugging.

Move the main clutch lever forward over-center, engaging the main clutch to operate the fan and cutterhead. This will also engage the feed rolls and harvesting unit, since the feed roll and harvesting unit drive lever is already engaged. Check to see that all components are running freely.

IMPORTANT: Always engage main clutch lever firmly. Do not hesitate while engaging clutch or damage to clutch may occur.

Main clutch operates properly *Yes*_____

21. Check Feed Roll Shift Lever

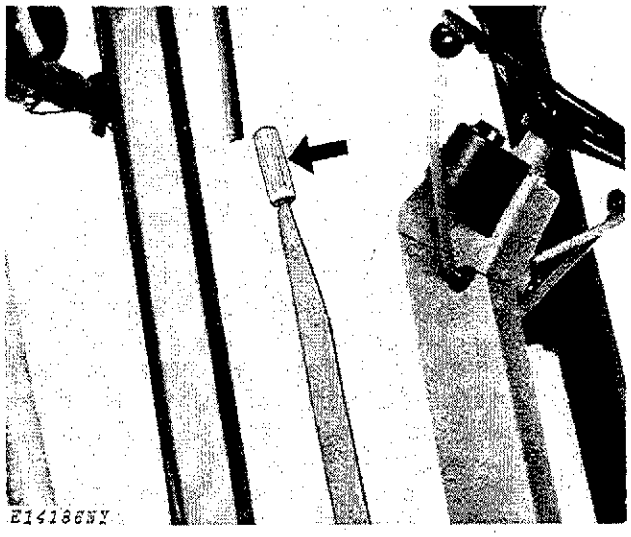
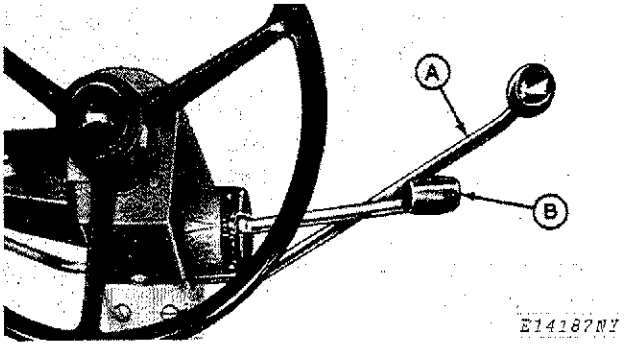


Fig. 21-Feed Roll Shift Lever

This lever allows forward drive and reversing of the feed rolls and harvesting unit. To engage the feed rolls and harvesting unit, move lever forward for normal feeding and rearward to reverse direction of the feed rolls and harvesting unit.

Feed roll shift lever operates properly *Yes*_____

22. Check Hydrostatic Drive Operation and Header Lift Lever



A—Header Lift Lever **B—Hydrostatic Drive Lever**

Fig. 22-Drive and Spout Levers

Hydrostatic Drive Lever

This lever, along with the transmission, controls the ground speed. To move forward, push lever forward. To move rearward, raise lever and move lever rearward.

Header Lift Lever

The header lift lever allows complete movement of the cutterhead and harvesting unit from the operator's seat. To raise the head pull lever rearward. To lower the head push the lever forward.

Levers operate properly *Yes*_____

23. General Checks

Make the following general checks of the harvester before delivery.

All moving parts are working freely.

Cutterhead knives are properly adjusted.

Feed roll drive chain idler is adjusted.

Grinder stone tightened against stone door. Strip coating has been removed from stone shaft.

Make sure all slip clutches will slip.

Discharge spout cap control cable properly installed.

After pickup, row-crop, corn head unit, stalker or mower bar has been installed, run harvester for one-half hour and make sure bearings are not heating.

Tighten accessible nuts and cap screws.

Clean harvester and touch up paint.

24. Final Check

The final predelivery procedure is the overall clean-up of the unit. Make the unit LOOK like a new machine with the proper touch-up of chipped paint and a good wash job. Deliver to the customer a machine he will be proud to own.

DELIVERY SERVICE

A thorough discussion of the operation and service of a new harvester at the time of delivery helps to assure complete customer satisfaction. Proper delivery should be an important phase of a dealer's program. A portion of the John Deere Delivery Receipt emphasizes the importance of proper delivery service.

Many complaints have arisen simply because the owner was not shown how to operate and service his new harvester properly. Enough time should be devoted, at the customer's convenience, to introducing the owner to his new harvester and explaining to him how to operate and service it.

IMPORTANT: Install a cover over muffler outlet if hauling harvester to customer. This will prevent damage to the turbocharger caused by air passing through the turbocharger and rotating it without lubrication when the engine is stopped.

The following procedure is recommended before the service technician and owner complete the delivery acknowledgments portion of the delivery receipt.

Using the harvester operator's manual as a guide, be sure that the owner understands these points thoroughly:

1. Controls and instruments.
2. How to start and stop the engine.
3. The importance of the break-in period.
4. All functions of the hydraulic system.
5. All functions of hydrostatic system.
6. The operation of the feed roll shift lever.
7. Point out the slip clutches and the importance of proper adjustment.
8. Advise the customer of the proper procedure for using the sharpening stone and importance of maintaining proper shear bar-to-cutterhead knife adjustment.
9. Explain the advantages of using the correct recutter screen for special crop-operating conditions and the desired product.
10. Advise the customer of the optional attachments that are available for special crop and operating conditions.
11. The importance of lubrication and periodic services.
12. The importance of safety.

After explaining and demonstrating the above features, have the owner sign the delivery receipt and give him the operator's manual.

AFTER-SALE INSPECTION

The purchaser of a new John Deere harvester is entitled to a free inspection within the warranty period after the equipment has been "run in". The terms of this after-sale inspection are outlined on the back of the John Deere Delivery Receipt.

The purpose of this inspection is to make sure that the customer is receiving satisfactory performance from his harvester. At the same time, the inspection should reveal whether or not the harvester is being operated, lubricated, and serviced properly.

If the recommended after-sale service inspection is followed, the dealer can eliminate a needless volume of service work by preventing minor irregularities from developing into serious problems later on. This will promote strong dealer-customer relations and present the dealer an opportunity to answer questions that may have arisen during the first few days of operation. During the inspection service, the dealer has the further opportunity of promoting the possible sale of other new equipment.

The following inspection program is recommended within the first 100 hours of harvester operation.

Cooling System

1. Check Radiator Coolant Level

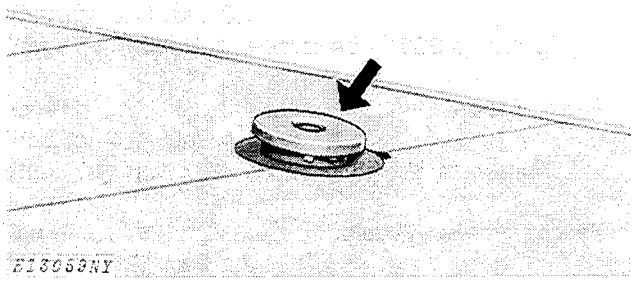


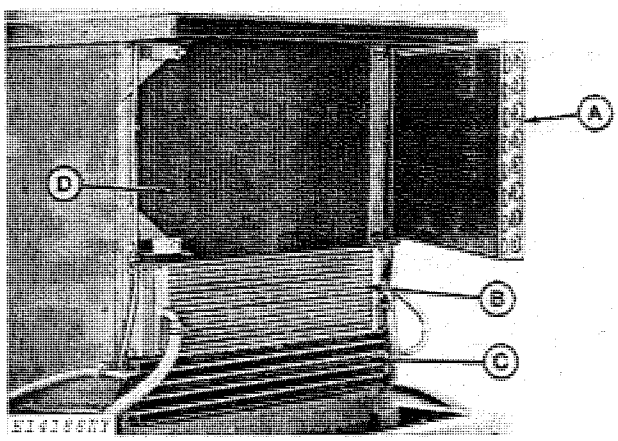
Fig. 23-Radiator Filler Cap

CAUTION: Remove the filler cap only when the coolant temperature is below the boiling point. Then loosen the cap slightly to the stop to relieve pressure before removing the cap completely.

Check the level of coolant in the radiator. Coolant should be maintained at a level 2-inches (51 mm) above the baffle. Add permanent type antifreeze if cold weather is anticipated.

Radiator coolant level checked *Yes*_____
Coolant or antifreeze added *Yes*_____

2. Clean Radiator Core



A—Air-Conditioner Condenser Core
B—Hydraulic Oil Cooler
C—Main Gear Case Cooler Core
D—Radiator Core

Fig. 14-Radiator Core

Pull screen off frame by removing two bolts. Clean and straighten bent fins on the air-conditioner condenser core (A), hydraulic oil cooler (B), main gear case cooler core (C on 5460 only), and radiator core (D). Remove all chaff, dirt, and foreign material from the radiator screen and replace it.

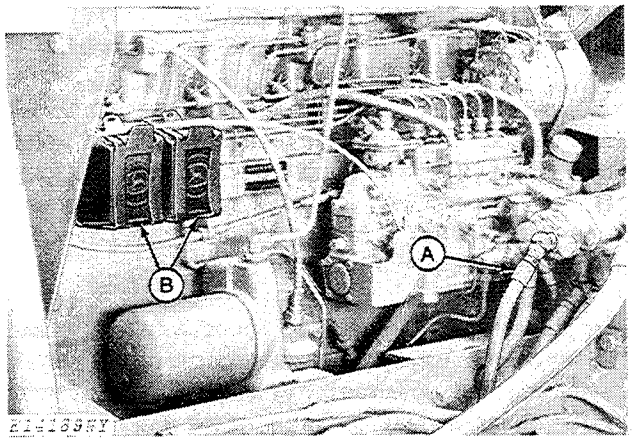
IMPORTANT: Horn will blow when radiator screen becomes clogged with dirt and causes engine overheating. Stop harvester, idle engine, and clean screen. Do not shut off engine.

Radiator core cleaned *Yes*_____

3. Hoses and Connections
   Check all hoses and connections for leaks.

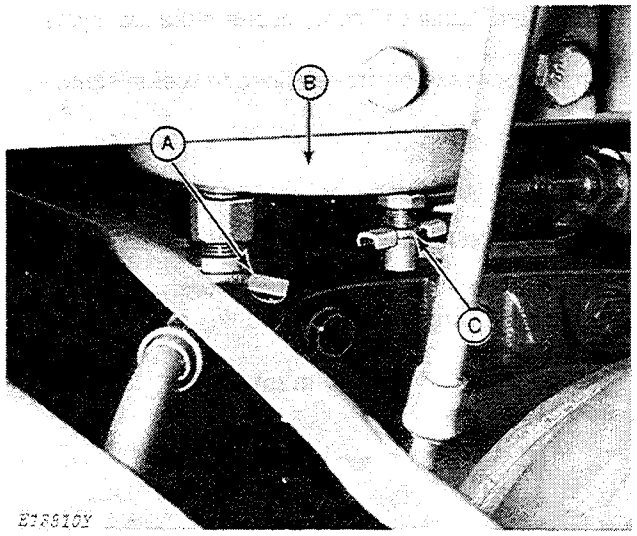
Fuel System

1. Remove water and foreign material from sediment bowl and fuel tank.



A—Sediment Bowl **B—Fuel Filters**

Fig. 25-Fuel System



A—Fuel Shut-Off Valve
B—Fuel Tank
C—Sump Drain Cock

Fig. 26-Fuel Tank Sump and Shut-Off